



## SEQUENCE LISTING

&lt;110&gt; Statens Serum Institut

&lt;120&gt; Nucleic acid fragments and polypeptide fragments derived from M. Tuberculosis

&lt;130&gt; 22030DK1

&lt;160&gt; 8

&lt;170&gt; FastSEQ for Windows Version 3.0

&lt;210&gt; 1

&lt;211&gt; 3990

&lt;212&gt; DNA

&lt;213&gt; Mycobacterium Tuberculosis

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(3990)

&lt;400&gt; 1

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Ser His Gln Gly Thr Ile Ile Ile Glu Ala Pro Pro Glu Leu Pro Arg	
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Val Ile Pro Pro Ser Leu Leu Arg Arg Ala Leu Pro Tyr Leu Ile Gly	
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atc ctc atc gtg ggg atg atc gtg gcg ctg gtc gcc acc ggg atg cgg	192
Ile Leu Ile Val Gly Met Ile Val Ala Leu Val Ala Thr Gly Met Arg	
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Val Ile Ser Pro Gln Thr Leu Phe Phe Pro Phe Val Leu Leu Ala	
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gcc acc gcg ctc tac cgc ggc aac gac aag aag atg cgc acc gag gag	288
Ala Thr Ala Leu Tyr Arg Gly Asn Asp Lys Lys Met Arg Thr Glu Glu	
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gtc gac gcc gaa cgg gcc gac tac cta cgt tac cta tcg gtg gtg cgg	336
Val Asp Ala Glu Arg Ala Asp Tyr Leu Arg Tyr Leu Ser Val Val Arg	
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gac aac att cgg gcc cag gcc gcc gag cag cgg gcc agc gcg ttg tgg	384
Asp Asn Ile Arg Ala Gln Ala Ala Glu Gln Arg Ala Ser Ala Leu Trp	
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Ser His Pro Asp Pro Thr Ala Leu Ala Ser Val Pro Gly Ser Arg Arg	

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Gln Trp Glu Arg Asp Pro His Asp Pro Asp Phe Leu Val Leu Arg Ala			
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Gly Arg His Thr Val Pro Leu Ala Thr Thr Leu Arg Val Asn Asp Thr			
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Ala Asp Glu Ile Asp Leu Glu Pro Val Ser His Ser Ala Leu Arg Ser			
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ctg ctc gac acc cag cgc agc att ggc gac gtg ccg acc ggg atc gac			624
Leu Leu Asp Thr Gln Arg Ser Ile Gly Asp Val Pro Thr Gly Ile Asp			
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ctg acc aag gtt tgc ccg atc acc gtg ctg ggg gag cgc gca cag gtg			672
Leu Thr Lys Val Ser Pro Ile Thr Val Leu Gly Glu Arg Ala Gln Val			
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Arg Ala Val Leu Arg Ala Trp Ile Ala Gln Ala Val Thr Trp His Asp			
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Pro Thr Val Leu Gly Val Ala Leu Ala Ala Arg Asp Leu Glu Gly Arg			
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gat tgg aac tgg ctg aag tgg tta ccg cac gtg gac att ccc ggc cgc			816
Asp Trp Asn Trp Leu Lys Trp Leu Pro His Val Asp Ile Pro Gly Arg			
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ctc gat gcg ctg ggc ccg gcc cgc aat ctg tgc acc gat ccc gac gag			864
Leu Asp Ala Leu Gly Pro Ala Arg Asn Leu Ser Thr Asp Pro Asp Glu			
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Leu Ile Ala Leu Leu Gly Pro Val Leu Ala Asp Arg Pro Ala Phe Thr			
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Gly Gln Pro Thr Asp Ala Leu Arg His Leu Leu Ile Val Val Asp Asp			
	305	310	315
ccg gac tac gac ctg ggc gca tgc ccg ctg gcg gtg ggc cgc gcg ggt			1008
Pro Asp Tyr Asp Leu Gly Ala Ser Pro Leu Ala Val Gly Arg Ala Gly			
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Val Thr Val Val His Cys Ser Ala Ser Ala Pro His Arg Glu Gln Tyr			
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tgc gat ccg gaa aag ccg atc ctg cgg gtg gct cac ggc gct atc gaa			1104
Ser Asp Pro Glu Lys Pro Ile Leu Arg Val Ala His Gly Ala Ile Glu			
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Asp Ser Asn Pro Thr His Ala Gly Leu Arg Ser Ala Ala Thr Arg Gly	
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Val Pro Ala Leu Trp Ala Pro Arg Arg Arg Asp Glu Glu Leu Arg Val	
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Pro Ile Gly Val Thr Gly Thr Gly Glu Pro Leu Met Phe Asp Leu Lys	
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Asp Glu Ala Glu Gly Gly Met Gly Pro His Gly Leu Met Ile Gly Met	
465 470 475 480	
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Thr Gly Ser Gly Lys Ser Gln Thr Leu Met Ser Ile Leu Leu Ser Leu	
485 490 495	
ttg acc aca cac tcc gcg gag ccg ctc atc gtc atc tac gcc gac ttc	1536
Leu Thr Thr His Ser Ala Glu Arg Leu Ile Val Ile Tyr Ala Asp Phe	
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aag ggt gag gcc ggc gcc gac agt ttc cga gat ttc ccg cag gtg gtt	1584
Lys Gly Glu Ala Gly Ala Asp Ser Phe Arg Asp Phe Pro Gln Val Val	
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Ala Val Ile Ser Asn Met Ala Glu Lys Lys Ser Leu Ala Asp Arg Phe	
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Ala Asp Thr Leu Arg Gly Glu Val Ala Arg Arg Glu Met Leu Leu Arg	
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Glu Ala Gly Arg Lys Val Gln Gly Ser Ala Phe Asn Ser Val Leu Glu	
565 570 575	
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Tyr Glu Asn Ala Ile Ala Ala Gly His Ser Leu Pro Pro Ile Pro Thr	
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Leu Phe Val Val Ala Asp Glu Phe Thr Leu Met Leu Ala Asp His Pro	
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ccc ggt gcc acc ccg ata agg ttc cgc agc acc tat gtc gac ggg atc Pro Gly Ala Thr Pro Ile Arg Phe Arg Ser Thr Tyr Val Asp Gly Ile 690 695 700	2112
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gcg ttg gcc cgc gcc ggg gtg ggc ccc cgg cag tgg cgc tgg ccg ctg Ala Leu Ala Arg Ala Gly Val Gly Pro Arg Gln Trp Arg Trp Pro Leu 785 790 795 800	2400
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gac gct agg tcg tcg gcc gga aat atg gtg atc cac ggc ggc ccc aag Asp Ala Arg Ser Ser Ala Gly Asn Met Val Ile His Gly Gly Pro Lys 820 825 830	2496
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ggg cag ctg cgg gcg cta cag gat cta gcg cac gtc ggc agt gtc gcc Gly Gln Leu Arg Ala Leu Gln Asp Leu Ala His Val Gly Ser Val Ala 865 870 875 880	2640
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acc cgt aat ccg ttg ctg gcc agg gta acc gaa ctg gtc aac gtg ggc Thr Arg Asn Pro Leu Leu Ala Arg Val Thr Glu Leu Val Asn Val Gly 945 950 955 960	2880
ctt gcc tac ggg atc cac gtg atc att acc acg ccg agc tgg ctg gaa Leu Ala Tyr Gly Ile His Val Ile Ile Thr Thr Pro Ser Trp Leu Glu 965 970 975	2928
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1075	1080	1085	
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cag tca  
 Gln Ser  
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3990

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<400> 2

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 Val Ile Pro Pro Ser Leu Leu Arg Arg Ala Leu Pro Tyr Leu Ile Gly  
 35 40 45  
 Ile Leu Ile Val Gly Met Ile Val Ala Leu Val Ala Thr Gly Met Arg  
 50 55 60  
 Val Ile Ser Pro Gln Thr Leu Phe Phe Pro Phe Val Leu Leu Leu Ala  
 65 70 75 80  
 Ala Thr Ala Leu Tyr Arg Gly Asn Asp Lys Lys Met Arg Thr Glu Glu  
 85 90 95  
 Val Asp Ala Glu Arg Ala Asp Tyr Leu Arg Tyr Leu Ser Val Val Arg  
 100 105 110  
 Asp Asn Ile Arg Ala Gln Ala Ala Glu Gln Arg Ala Ser Ala Leu Trp  
 115 120 125  
 Ser His Pro Asp Pro Thr Ala Leu Ala Ser Val Pro Gly Ser Arg Arg  
 130 135 140  
 Gln Trp Glu Arg Asp Pro His Asp Pro Asp Phe Leu Val Leu Arg Ala  
 145 150 155 160  
 Gly Arg His Thr Val Pro Leu Ala Thr Thr Leu Arg Val Asn Asp Thr  
 165 170 175  
 Ala Asp Glu Ile Asp Leu Glu Pro Val Ser His Ser Ala Leu Arg Ser  
 180 185 190  
 Leu Leu Asp Thr Gln Arg Ser Ile Gly Asp Val Pro Thr Gly Ile Asp  
 195 200 205  
 Leu Thr Lys Val Ser Pro Ile Thr Val Leu Gly Glu Arg Ala Gln Val  
 210 215 220  
 Arg Ala Val Leu Arg Ala Trp Ile Ala Gln Ala Val Thr Trp His Asp  
 225 230 235 240  
 Pro Thr Val Leu Gly Val Ala Leu Ala Ala Arg Asp Leu Glu Gly Arg  
 245 250 255  
 Asp Trp Asn Trp Leu Lys Trp Leu Pro His Val Asp Ile Pro Gly Arg  
 260 265 270  
 Leu Asp Ala Leu Gly Pro Ala Arg Asn Leu Ser Thr Asp Pro Asp Glu  
 275 280 285  
 Leu Ile Ala Leu Leu Gly Pro Val Leu Ala Asp Arg Pro Ala Phe Thr  
 290 295 300  
 Gly Gln Pro Thr Asp Ala Leu Arg His Leu Leu Ile Val Val Asp Asp  
 305 310 315 320  
 Pro Asp Tyr Asp Leu Gly Ala Ser Pro Leu Ala Val Gly Arg Ala Gly  
 325 330 335  
 Val Thr Val Val His Cys Ser Ala Ser Ala Pro His Arg Glu Gln Tyr  
 340 345 350  
 Ser Asp Pro Glu Lys Pro Ile Leu Arg Val Ala His Gly Ala Ile Glu

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Val	Pro	Ala	Leu	Trp	Ala	Pro	Arg	Arg	Arg	Asp	Glu	Glu	Leu	Arg	Val		
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Pro	Ile	Gly	Val	Thr	Gly	Thr	Gly	Glu	Pro	Leu	Met	Phe	Asp	Leu	Lys		
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Lys	Gly	Glu	Ala	Gly	Ala	Asp	Ser	Phe	Arg	Asp	Phe	Pro	Gln	Val	Val		
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Ala	Val	Ile	Ser	Asn	Met	Ala	Glu	Lys	Lys	Ser	Leu	Ala	Asp	Arg	Phe		
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Leu	Phe	Val	Val	Ala	Asp	Glu	Phe	Thr	Leu	Met	Leu	Ala	Asp	His	Pro		
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Glu	Tyr	Ala	Glu	Leu	Phe	Asp	Tyr	Val	Ala	Arg	Lys	Gly	Arg	Ser	Phe		
	610					615					620						
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Ser	Pro	Ser	Val	Ser	Arg	Gln	Ile	Ile	Gly	Val	Glu	Asp	Ala	Tyr	His		
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Ile	Glu	Ser	Gly	Lys	Glu	His	Lys	Gly	Val	Gly	Phe	Leu	Val	Pro	Ala		
		675					680										



Ser Gly Lys Ser Thr Ala Leu Gln Thr Phe Ile Leu Ser Ala Ala Ser  
 835 840 845  
 Leu His Ser Pro His Glu Val Ser Phe Tyr Cys Leu Asp Tyr Gly Gly  
 850 855 860  
 Gly Gln Leu Arg Ala Leu Gln Asp Leu Ala His Val Gly Ser Val Ala  
 865 870 875 880  
 Ser Ala Leu Glu Pro Glu Arg Ile Arg Arg Thr Phe Gly Glu Leu Glu  
 885 890 895  
 Gln Leu Leu Leu Ser Arg Gln Gln Arg Glu Val Phe Arg Asp Arg Gly  
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 Ala Asn Gly Ser Thr Pro Asp Asp Gly Phe Gly Glu Val Phe Leu Val  
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 Ile Asp Asn Leu Tyr Gly Phe Gly Arg Asp Asn Thr Asp Gln Phe Asn  
 930 935 940  
 Thr Arg Asn Pro Leu Leu Ala Arg Val Thr Glu Leu Val Asn Val Gly  
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 Val Pro Leu Ala Met Arg Asp Gly Leu Gly Leu Arg Leu Glu Leu Arg  
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 995 1000 1005  
 Arg Pro Ala Asp Ala Val Pro His Asp Gln Pro Gly Arg Gly Leu Thr  
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 1140 1145 1150  
 Asn Glu Tyr Thr Ala Asn Ile Asp Arg Ile Ile Pro Ala Met Leu Gly  
 1155 1160 1165  
 Leu Ala Asn Leu Ile Glu Ala Arg Arg Pro Pro Ala Gly Met Ser Ala  
 1170 1175 1180  
 Ala Glu Leu Ser Arg Trp Thr Phe Ala Gly His Thr His Tyr Leu Ile  
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 Ile Asp Asp Val Asp Gln Val Pro Asp Ser Pro Ala Met Thr Gly Pro  
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 Ala Gly Asp Leu Gly Leu Arg Val Ile Val Thr Gly Arg Ala Thr Gly  
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 Ser Ala His Leu Leu Met Thr Ser Pro Leu Leu Arg Arg Phe Asn Asp  
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 Leu Gln Ala Thr Thr Leu Met Leu Ala Gly Asn Pro Ala Asp Ser Gly  
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 Lys Ile Arg Gly Glu Arg Phe Ala Arg Leu Pro Ala Gly Arg Ala Ile  
 1285 1290 1295  
 Leu Leu Thr Asp Ser Asp Ser Pro Thr Tyr Val Gln Leu Ile Asn Pro

1300                      1305                      1310  
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           1315                      1320                      1325  
 Gln Ser  
       1330

<210> 3  
 <211> 375  
 <212> DNA  
 <213> Mycobacterium Tuberculosis

<220>  
 <221> CDS  
 <222> (1)...(375)

<400> 3  
 cag gta ccg gat tcg ccg gcg atg acc ggt ccc tac atc gga cag cgg                      48  
 Gln Val Pro Asp Ser Pro Ala Met Thr Gly Pro Tyr Ile Gly Gln Arg  
       1                      5                      10                      15  
 ccg tgg acc ccg ctg atc ggt ctc ctg gcc cag gcc ggc gac ttg ggg                      96  
 Pro Trp Thr Pro Leu Ile Gly Leu Leu Ala Gln Ala Gly Asp Leu Gly  
           20                      25                      30  
 cta cgg gtg att gtc acc ggg cgt gcc act gga tcg gcg cac ctg ctg                      144  
 Leu Arg Val Ile Val Thr Gly Arg Ala Thr Gly Ser Ala His Leu Leu  
           35                      40                      45  
 atg aca agt ccg ttg ctg cgc cgg ttc aac gac ctg cag gcg acc acg                      192  
 Met Thr Ser Pro Leu Leu Arg Arg Phe Asn Asp Leu Gln Ala Thr Thr  
           50                      55                      60  
 ctg atg ttg gca ggc aat ccg gcc gac agc gcc aag att cgc ggt gag                      240  
 Leu Met Leu Ala Gly Asn Pro Ala Asp Ser Gly Lys Ile Arg Gly Glu  
           65                      70                      75                      80  
 cgg ttt gcc cga ttg cct gct gga cga gca att ctg ttg acc gac agt                      288  
 Arg Phe Ala Arg Leu Pro Ala Gly Arg Ala Ile Leu Leu Thr Asp Ser  
           85                      90                      95  
 gat agt cca acc tac gtg cag ttg atc aac ccg ctg gtc gat gcg gcc                      336  
 Asp Ser Pro Thr Tyr Val Gln Leu Ile Asn Pro Leu Val Asp Ala Ala  
           100                      105                      110  
 gcg gtt tct ggt gaa acc caa cag aag ggg agt cag tca                      375  
 Ala Val Ser Gly Glu Thr Gln Gln Lys Gly Ser Gln Ser  
           115                      120                      125

<210> 4  
 <211> 125  
 <212> PRT  
 <213> Mycobacterium Tuberculosis

<400> 4  
 Gln Val Pro Asp Ser Pro Ala Met Thr Gly Pro Tyr Ile Gly Gln Arg  
       1                      5                      10                      15  
 Pro Trp Thr Pro Leu Ile Gly Leu Leu Ala Gln Ala Gly Asp Leu Gly  
           20                      25                      30

Leu Arg Val Ile Val Thr Gly Arg Ala Thr Gly Ser Ala His Leu Leu  
           35                  40                  45  
 Met Thr Ser Pro Leu Leu Arg Arg Phe Asn Asp Leu Gln Ala Thr Thr  
           50                  55                  60  
 Leu Met Leu Ala Gly Asn Pro Ala Asp Ser Gly Lys Ile Arg Gly Glu  
   65                  70                  75                  80  
 Arg Phe Ala Arg Leu Pro Ala Gly Arg Ala Ile Leu Leu Thr Asp Ser  
                   85                  90                  95  
 Asp Ser Pro Thr Tyr Val Gln Leu Ile Asn Pro Leu Val Asp Ala Ala  
           100                  105                  110  
 Ala Val Ser Gly Glu Thr Gln Gln Lys Gly Ser Gln Ser  
           115                  120                  125

<210> 5  
 <211> 306  
 <212> DNA  
 <213> Mycobacterium Tuberculosis

<220>  
 <221> CDS  
 <222> (1)...(306)

<400> 5  
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 Met Thr Leu Arg Val Val Pro Glu Gly Leu Ala Ala Ser Ala Ala  
   1                  5                  10                  15  
  
 gtg gaa gcg ctg acg gcg cgg ttg gcc gcc gcg cat gcg agc gca gcg 96  
 Val Glu Ala Leu Thr Ala Arg Leu Ala Ala Ala His Ala Ser Ala Ala  
           20                  25                  30  
  
 ccg gtg att acc gcg gta gtg ccg ccg gcg gcg gat ccg gtg tcg ctg 144  
 Pro Val Ile Thr Ala Val Val Pro Pro Ala Ala Asp Pro Val Ser Leu  
           35                  40                  45  
  
 cag acc gcg gcc ggg ttc agt gca cag ggc gtc gag cac gcg gtc gtc 192  
 Gln Thr Ala Ala Gly Phe Ser Ala Gln Gly Val Glu His Ala Val Val  
           50                  55                  60  
  
 acc gcc gaa ggt gtc gaa gag ctg gga cgc gcc gcc ggt ggt gtg ggc 240  
 Thr Ala Glu Gly Val Glu Glu Leu Gly Arg Ala Gly Val Gly Val Gly  
   65                  70                  75                  80  
  
 gaa tcc ggc gcc agc tac ctg gcc ggt gat gcg gcc gcc gcc gct acg 288  
 Glu Ser Gly Ala Ser Tyr Leu Ala Gly Asp Ala Ala Ala Ala Ala Thr  
           85                  90                  95  
  
 tac ggg gtc gtg ggc ggc 306  
 Tyr Gly Val Val Gly Gly  
           100

<210> 6  
 <211> 102  
 <212> PRT  
 <213> Mycobacterium Tuberculosis

<400> 6  
 Met Thr Leu Arg Val Val Pro Glu Gly Leu Ala Ala Ala Ser Ala Ala

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      1           5           10           15
Val Glu Ala Leu Thr Ala Arg Leu Ala Ala His Ala Ser Ala Ala
      20           25           30
Pro Val Ile Thr Ala Val Val Pro Pro Ala Ala Asp Pro Val Ser Leu
      35           40           45
Gln Thr Ala Ala Gly Phe Ser Ala Gln Gly Val Glu His Ala Val Val
      50           55           60
Thr Ala Glu Gly Val Glu Glu Leu Gly Arg Ala Gly Val Gly Val Gly
      65           70           75           80
Glu Ser Gly Ala Ser Tyr Leu Ala Gly Asp Ala Ala Ala Ala Thr
      85           90           95
Tyr Gly Val Val Gly Gly
      100

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<210> 7
<211> 840
<212> DNA
<213> Mycobacterium Tuberculosis

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<220>
<221> CDS
<222> (1)...(840)

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      <400> 7
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Met Ala Glu Pro Leu Ala Val Asp Pro Thr Gly Leu Ser Ala Ala Ala
      1           5           10           15

gcg aaa ttg gcc ggc ctc gtt ttt ccg cag cct ccg gcg ccg atc gcg      96
Ala Lys Leu Ala Gly Leu Val Phe Pro Gln Pro Pro Ala Pro Ile Ala
      20           25           30

gtc agc gga acg gat tcg gtg gta gca gca atc aac gag acc atg cca      144
Val Ser Gly Thr Asp Ser Val Val Ala Ala Ile Asn Glu Thr Met Pro
      35           40           45

agc atc gaa tcg ctg gtc agt gac ggg ctg ccc ggc gtg aaa gcc gcc      192
Ser Ile Glu Ser Leu Val Ser Asp Gly Leu Pro Gly Val Lys Ala Ala
      50           55           60

ctg act cga aca gca tcc aac atg aac gcg gcg gcg gac gtc tat gcg      240
Leu Thr Arg Thr Ala Ser Asn Met Asn Ala Ala Ala Asp Val Tyr Ala
      65           70           75           80

aag acc gat cag tca ctg gga acc agt ttg agc cag tat gca ttc ggc      288
Lys Thr Asp Gln Ser Leu Gly Thr Ser Leu Ser Gln Tyr Ala Phe Gly
      85           90           95

tcg tcg ggc gaa ggc ctg gct ggc gtc gcc tcg gtc ggt ggt cag cca      336
Ser Ser Gly Glu Gly Leu Ala Gly Val Ala Ser Val Gly Gly Gln Pro
      100           105           110

agt cag gct acc cag ctg ctg agc aca ccc gtg tca cag gtc acg acc      384
Ser Gln Ala Thr Gln Leu Leu Ser Thr Pro Val Ser Gln Val Thr Thr
      115           120           125

cag ctc ggc gag acg gcc gct gag ctg gca ccc cgt gtt gtt gcg acg      432
Gln Leu Gly Glu Thr Ala Ala Glu Leu Ala Pro Arg Val Val Ala Thr
      130           135           140

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115															120					125							
Gln	Leu	Gly	Glu	Thr	Ala	Ala	Glu	Leu	Ala	Pro	Arg	Val	Val	Ala	Thr												
130															135					140							
Val	Pro	Gln	Leu	Val	Gln	Leu	Ala	Pro	His	Ala	Val	Gln	Met	Ser	Gln												
145															150					155							
Asn	Ala	Ser	Pro	Ile	Ala	Gln	Thr	Ile	Ser	Gln	Thr	Ala	Gln	Gln	Ala												
165															170					175							
Ala	Gln	Ser	Ala	Gln	Gly	Gly	Ser	Gly	Pro	Met	Pro	Ala	Gln	Leu	Ala												
180															185					190							
Ser	Ala	Glu	Lys	Pro	Ala	Thr	Glu	Gln	Ala	Glu	Pro	Val	His	Glu	Val												
195															200					205							
Thr	Asn	Asp	Asp	Gln	Gly	Asp	Gln	Gly	Asp	Val	Gln	Pro	Ala	Glu	Val												
210															215					220							
Val	Ala	Ala	Ala	Arg	Asp	Glu	Gly	Ala	Gly	Ala	Ser	Pro	Gly	Gln	Gln												
225															230					235							
Pro	Gly	Gly	Gly	Val	Pro	Ala	Gln	Ala	Met	Asp	Thr	Gly	Ala	Gly	Ala												
245															250					255							
Arg	Pro	Ala	Ala	Ser	Pro	Leu	Ala	Ala	Pro	Val	Asp	Pro	Ser	Thr	Pro												
260															265					270							
Ala	Pro	Ser	Thr	Thr	Thr	Thr	Leu																				
275															280												